JAVIER CABRERA

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Software Engineer

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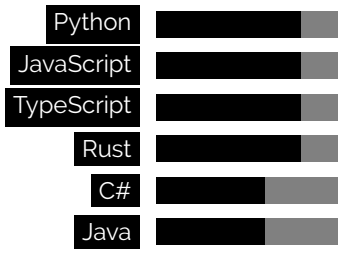
WHO AM I?

My name is Javier Cabrera, I am 29 years old, and I am currently working as a PhD student at KTH Royal Institute of Technology in Sweden. I graduated from the University of Havana in 2016 with a Master's Degree in Computer Science. Early in my career, I started to work with state-of-the-art technologies as a software developer, and I continue doing so. As a PhD student, I am currently researching on Software Engineering, more specifically, by using Software Diversification for reliability and security. Software and automation are my passions, and I enjoy using my skills to contribute to these topics in all ways that I can.

PROEFICIENCY



LANGUAGES

Spanish - native
English - proficient
Swedish - rudimentary

Git | CI | Docker | Microservices | Kubernetes | Algorithm's design | Compiler's design and implementation | LLVM | High Performance Computing | Data Science

EXPERIENCE

09/2021 – 12/2021 **Contractor Software Engineer** — **Fastly Inc.**
I found a *CVE* in the Lucet's compiler used by the edge-cloud computing platform of Fastly. I worked for Fastly, developing a specific *subproject* for the testing platform in the Fastly WebAssembly compiler.
`Rust / WebAssembly / Compilers / Testing through fuzzing / libfuzzer`

3/2019 – **Phd. student/Researcher** — **KTH Royal Institute of Technology.**
I started my Phd early in 2019 at KTH. I do Software Randomization for Security, being team member of the Trustworthy Fullstack Computing project. During this time, we have contributed to the scientific community, and we have implemented pushing-the-limits tools, such as two software diversifies that are actually enforcing the security of top technology companies such as Fastly.
`Diversification / Automatic Testing / Compilers / DevOps / edge-computing`

11/2017 – 3/2019 **Software Engineer/Full stack developer** — **Iberant SL.**
I worked at Iberant for more than one year. During that time I mostly worked as a full stack developer creating an ERP system. Concretely speaking, we created an event sourcing architecture following the specifications of our clients at that moment. We integrated technologies such as Azure, and we even created our own DSL implementation to support an easy-to-use IFTTT platform.
`.Net Core / Microservices / C# / MsSQL / React-Redux / Azure`

2016 – 11/2017 **Android mobile developer** — **dimecuba.com**
`Android / Java`

2016 – 3/2019 **Assistant professor** — **University of Havana**
After graduated, I received an offer to be an assistant professor at University of Havana. I used to teach programming languages and compiling.
`Introduction to OOP with C# / Compiling and Language Theory`

EDUCATION

2019 – 2022 (WIP) **Licentiate degree** — **KTH Royal Institute of Technology**
Completed courses: Programming for Data Science , Cyber-physical systems safety and security , Introduction to High Performance Computing , Research preparation course in programming languages and formal methods , Advanced Ethical Hacking , Critical Perspectives on Data Science and Machine Learning , Solving Combinatorial Problems with MiniZinc .

2016 **Postgraduate Diploma equivalent to European master's degree in CS** — **University of Havana**

RESEARCH

Papers

[1] Javier Cabrera Arteaga, Pierre Laperdrix, Martin Monperrus, and Benoit Baudry.
"Multi-Variant Execution at the Edge".
In: *arXiv e-prints*, arXiv:2108.08125 (Aug. 2021), arXiv:2108.08125.
URL: `https://arxiv.org/abs/2108.08125`.

[2] Javier Cabrera Arteaga, Orestis Floros Malivitsis, Oscar Luis Vera Pérez, Benoit Baudry, and Martin Monperrus.
"CROW: Code Diversification for WebAssembly".
In: *Proceedings of MADWeb, NDSS*.
2021.
URL: `https://api.semanticscholar.org/CorpusID:237108257`.

[3] Javier Cabrera Arteaga, Shrinish Donde, Jian Gu, Orestis Floros, Lucas Satabin, Benoit Baudry, and Martin Monperrus.
"Superoptimization of WebAssembly Bytecode".
In: *Conference Companion of the 4th International Conference on Art, Science, and Engineering of Programming*.
<programming> '20.
New York, NY, USA: Association for Computing Machinery, 2020.
URL: `https://doi.org/10.1145/3397537.3397567`.

[4] Javier Cabrera Arteaga, Martin Monperrus, and Benoit Baudry.
"Scalable Comparison of JavaScript V8 Bytecode Traces".
In: *Proceedings of the 11th ACM SIGPLAN International Workshop on Virtual Machines and Intermediate Languages*.
VMIL 2019.
New York, NY, USA: ACM, 2019.
URL: `http://doi.acm.org/10.1145/3358504.3361228`.

Supervised master theses

[1] Camille Fournier.
Comparison of Smoothness in Progressive Web Apps and Mobile Applications on Android.
2020.

[2] Adam Benali.
Neural Decompiliation of WebAssembly.
2021.